

MAGNETO ADSORBENT

Abstract of the Disclosure

A molecular sieve apparatus and magnetic/adsorbent material composition facilitate molecular adsorption and separation using a magnetic field to hold, move, cool, and/or heat an adsorbent 1 that is bonded to magnetic materials 3 that are moveable by a magnetic field. An adsorbent 1 is bonded to a soft magnetic material 3 with a binder 2 into a powder composite material adsorbent attractable by a magnetic field (magnetoadsorbent 4). Magnetoadsorbent 4 functions to adsorb and desorb working substances, causing a molecular separation; thereby increasing the efficiency of the adsorption cycle by moving the adsorbent 1 to a location that optimally processes the adsorbent 1. Magnetic field manipulation of adsorbents 1 enables delivery of molecules to locations within systems. Magnetoadsorbents 4 of the present invention further increase the efficiency of the adsorption cycle by combining materials with functions including: catalyst, buoyancy, suspension, magnetic heating, and sinking in liquid.

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